ReaLCoE.eu

ReaLCoE

ReaLCoE2020

ReaLCoE

Project Consortium

The ReaLCoE project consortium, led by Senvion, involves 15 partners, representing Europe's most active markets in offshore wind energy, ranging from multinational industry stakeholders through innovative SMEs to Universities and research institutes.

ReaLCoE

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11 EXPERIENCED INDUSTRY PLAYERS

3 INNOVATIVE SMEs

4 TOP-NOTCH R&D PARTNERS

SENVION We make wind perform.

Fraunhofer IWES

ECN | TNO innovation for life

DJN Jan De Nul GROUP

Ingeteam

DTU Technical University of Denmark

wood.

DNV·GL

BIBA

8.2 | The Experts in Renewable Energy

EnBW

JBO Beratende Ingenieure im Bauwesen

ABB

UPTIME ENGINEERING

Developing the Next Generation 12+ MW Offshore Wind Turbine for Clean and Competitive Electricity

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 791875.

ReaLCoE's Vision

ReaLCoE's vision is to unleash the full potential of offshore wind energy to be in direct competition with conventional energy sources in electricity markets worldwide by optimising and innovating in every link of the offshore wind value chain: from initial turbine design to equipment handling in the port, from testing to financing installation and providing electricity to final customers.

Project Overview

ReaLCoE stands for the development of Next Generation 12+ MW Rated, Robust, Reliable and Large Offshore Wind Energy Converters (WEC) for Clean, Low Cost and Competitive Electricity.

ReaLCoE is a pan-European R&D project funded by the European Commission within the Horizon 2020 program. The project was launched in May 2018 and will be led for the course of three and a half years by Senvion, a leading manufacturer and pioneer in offshore wind energy. The ReaLCoE consortium integrates 15 most experienced stakeholders along the complete value chain of the offshore wind energy sector.

Over the course of the project the consortium will develop, install, demonstrate, operate and test a technology platform for the first prototype of a double-digit rated capacity turbine in a realistic offshore environment. This modular designed wind turbine will be easily customizable for different markets and client requirements. This new turbine design will increase WECs' operational lifetime and lower service and maintenance requirements through more robust and interchangeable components.

Moreover, the project investigates business models to optimize investment and lower financial risks. To identify efficiencies and increase transparency at all levels along the value chain, ReaLCoE also proposes digitalization at every stage of the process.

The successful prototype operation is succeeded by the installation of a pre-series array in a real offshore environment, which will validate the concept and pave the way for modular generations of wind turbines with superior rated capacities.

ReaLCoE contributes to secure Europe's front runner position in the offshore wind energy industry generating growth and jobs through healthy competition in the global offshore wind turbine market.

DEMONSTRATION OF 12+ MW WEC

TESTING & CERTIFICATION

OPERATIONS & MAINTENANCE

LOGISTICS & INSTALLATION

GRID CONNECTION

DIGITIZATION

Specific Objectives and Implementation

The consortium expects to demonstrate individual cost reduction potentials for each individual cost block of an offshore wind farm to achieve an overall LCoE (Levelized Cost of Energy) reduction of up to 40-50%.

Under this guiding principle ReaLCoE has committed itself to implement a set of objectives on different levels.

FUNCTIONAL INNOVATION

+ **Modular testing and certification**
+ **Modular design**
+ **New maintenance strategies**
+ **Longevity**
+ **Holistic approach and integrated WEC design**
+ **New installation strategy**
+ **Digitalizing the sector**

TECHNOLOGICAL INNOVATION

+ **12+MW WEC**
+ **Floating foundation**
+ **Virtual reality training**
+ **Power transmission**
+ **System Services**
+ **Damping**
+ **Digital twin**